

Acoustics, Sound, and Noise

Sound Level Meters, Noise Dosimeters, Microphones, Software, and Accessories for Precision Acoustic Measurements, Analysis, Troubleshooting, and Noise Exposure Monitoring

Typical Applications

Product Testing

- Acoustic Chamber Testing
- Acoustic Mode Analysis
- Appliance Noise
- Audiometric Calibration
- Cabin Noise
- Engine Noise Analysis
- Exhaust Pressure Pulsations
- Near-field Acoustic Holography
- Reverberation
- Sound Insulation & Absorption
- Sound Intensity
- Sound Power Testing
- Sound Pressure Mapping
- Tool Noise
- Vibro-acoustic Testing
- Wildlife Studies

Environmental Noise

- Aircraft Noise
- Airport Noise Monitoring
- Artillery Noise
- Building Acoustics
- Community Noise
- Factory Noise
- Industrial Hygiene
- Industrial Noise
- Jet Engine Noise
- Machinery Noise
- Noise Barrier Studies
- Noise Control Engineering
- Occupational Noise
- Sonic Boom
- Traffic Noise
- Transportation Noise
- Vehicle Passby



Acoustics, Sound, and Noise

PCB® and Larson Davis offer some of the most innovative acoustic analysis instruments available anywhere. Advanced sound level meters offer intuitive operation and a host of features to support all types of measurement, analysis, and monitoring tasks. Microphones and preamplifiers are manufactured to exacting standards for conducting precision measurements. Intelligent occupational noise dosimeters help assess noise exposure, while straightforward software aids in data management and compliance reporting. Whether the sound or noise is audible, ultrasonic, subsonic, desired, or undesired – we can help, with sensors and instruments that will satisfy virtually any acoustic measurement and analysis requirement. Products shown are also available for rental through The Modal Shop. (see page 9 for details)

Sound Level Meters

Model 831 Sound Level Meter for Environmental Noise

- Exceedance based logging
- Multiple communication options, including GPRS
- 2 GB data storage, including audio recording
- Small, lightweight, ergonomic design
- Interval 1/1 and 1/3 octave analysis
- Interfaces to outdoor microphones, up to 300 ft (91.4 m)
- Optional environmental enclosure
- Interfaces with DNA software for data reporting



System 824 Sound Level Meter & Real Time Analyzer

- Advanced sound level measurements
- Audiometer calibration (when used with AUDit™ software)
- Building acoustics
- Environmental noise monitoring
- Real-time FFT analysis
- Interfaces with DNA & AUDit™ software for data reporting



SoundTrack LxT® Sound Level Meter for Safety & Health Professionals

- Real time 1/1 & 1/3 octave analysis
- Overall data capture with time history
- Simple operation – with just one hand
- Multiple dose & exposure calculations
- 16-hour battery runtime
- Available as Class 1 or Class 2
- Interfaces with Blaze® & DNA software for data reporting



Spark® Occupational Noise Dosimeters

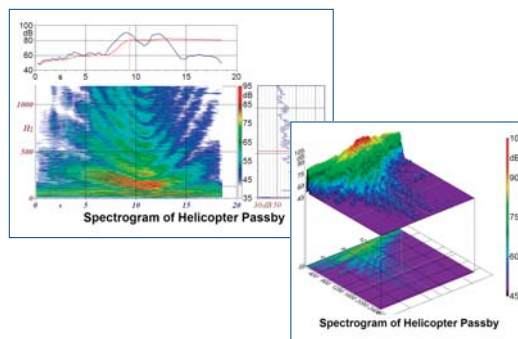
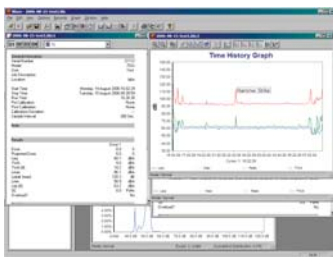
- Seven models, most with 100-hour battery life
- Universal noise exposure results with choice of multiple dose parameters
- Conforms to ANSI and IEC standards for dosimeters
- Conforms to MSHA, UL, ULC & ATEX standards for intrinsic safety
- High-speed IR data transfer to PC or 706RC without cable
- Interfaces with Blaze® software



Spark® Model	Major Features
703 Basic logging dosimeter (no LCD or keypad)	Downloads basic and summary reports to PC, controlled with Blaze®
703+ Logging dosimeter; remote response enabled (no LCD or keypad)	Complete report generation with Blaze®; can be operated, interrogated by 706RC
704 Stand-alone dosimeter for quick & easy measurements (with LCD and keypad)	Displays complete data; 4 doses, each with unique user defined settings
705 Logging dosimeter – super duty (no LCD or keypad)	Downloads basic and summary reports to PC, controlled with Blaze®
705+ Logging dosimeter – super duty; remote response (no LCD or keypad)	Complete report generation with Blaze®; can be operated, interrogated by 706RC or PC
706 Fully featured stand alone dosimeter, remote response	Complete report generation with Blaze®; can be operated, interrogated by 706RC or PC
706RC Fully featured dosimeter with LCD, keypad & remote control capability	Full report generation using Blaze®; gives surrogate display for 703+ or 705+ Remote control function allows setup & control of other remote response Spark® dosimeters; interrogates & stores data from multiple dosimeters

Software

Larson Davis offers set-up utility and data analysis software to support sound level meters for remote noise monitoring & acoustic data logging.



Blaze®

for Spark®, HVM100 & SoundTrack LxT®

- Provides set-up, data downloading and reporting for Spark® dosimeters, HVM100 & SoundTrack LxT®
- Exposure data and work shift graph on a single page
- Integral exposure database
- “What if” analysis of administrative or engineering controls

DNA (Data, Navigation & Analysis)

for Series 831, 824 & SoundTrack LxT® & HVM100

- Recorded sound analysis
- Environmental noise analysis
- Provides data capture, analysis, & graphical reporting for sound level meters
- Remote data collection
- Room & building acoustics
- Statistical & spectral analysis
- Vibration analysis, including FFT

AUDit™ & System 824 Audiometric Calibration & Electro-Acoustic Test System

- Supra-aural, bone vibration, extended frequency earphone testing, TDH earphone & hearing aid testing
- Automatically correct RETSPLs, microphone, coupler & other software adjustments
- Calibrate hearing level; linearity; frequency accuracy & total harmonic distortion
- Qualify booth ambient noise with real-time 1/3 analysis & fast pass/fail results for ANSI S3.1-1991

Test and Measurement Microphones

PCB® offers both externally polarized and prepolarized (also known as “electret”) microphones. Both types require a preamplifier for operation; however, prepolarized types may be powered with low voltage, constant current (2-20 mA) ICP® sensor signal conditioners and coaxial cables for an overall lower cost-per-channel. Externally polarized microphones require a 200 V polarization voltage. Free-field, random incidence, and pressure response versions are available for each microphone type. All microphones are individually tested for performance. A2LA accredited microphone calibration services are also available, for both PCB® and competitor models.

Precision Acoustic Microphones

- Modern prepolarized (electret) or traditional externally polarized types
- Can be utilized with Type 1 systems
- Meet IEC & ANSI standards



Actual Size

Model 377A50

- 1/8" pressure response
- 40 to 178 dB dynamic range
- 6.5 to 140k Hz



Actual Size

Model 377A12

- 1/4" pressure response
- 30 to 187 dB dynamic range
- 4 to 20k Hz



Actual Size

Model 377B02

- 1/2" free-field response
- 15 to 146 dB dynamic range
- 3.15 to 20k Hz



Actual Size

Model 377A60

- 1/2" externally polarized, random incidence
- 15 to 146 dB dynamic range
- 3.15 to 10k Hz



Actual Size

Model 377A42

- 1" free-field response
- 10 to 146 dB dynamic range
- 2.6 to 20k Hz

Preamplifiers

- Small and rugged
- Stainless steel housing
- Low noise floor
- Wide frequency bandwidth
- Compatible with ICP™ or 200 V externally polarized microphones



1/2 Actual Size

Model 426A30

- Compatible with 200 V externally polarized microphones
- 1/2" diameter
- -0.25 dB attenuation



1/2 Actual Size

Model 426A11

- Compatible with ICP™ prepolarized microphones
- 1/2" diameter
- Gain and filter switches



1/2 Actual Size

Model 426E01

- Compatible with ICP™ prepolarized microphones
- 1/2" diameter
- 2-wire operation; operates from ICP® sensor power
- -0.04 dB attenuation



Actual Size

Model 426B03

- Compatible with ICP™ prepolarized microphones
- 1/4" diameter
- -0.25 dB attenuation

Model 480A25 Preamplifier Power Supply

- 0 & 200 V polarization voltage
- 0, 20 & 40 dB gain
- 7-pin LEMO input connector
- Extended battery life (40 hours)
- Selectable flat(Z), A & C weighting
- 8.02" L × 4.10" W × 1.29" H (204 × 104 × 32.8 mm)



ICP™ Array Microphones

- Cost-effective electret microphones for multi-channel measurements
- Integral preamplifier
- Operate from ICP® sensor power
- Interchangeable with ICP® accelerometer set-ups
- Array kits available for multi-channel applications
- TEDS compatible



**Model 379A01
Array Stand**

- For sound pressure mapping, near-field acoustic holography & vibro-acoustic testing
- Accommodates installing array microphones in a grid pattern
- Adjustable grid sizes & configurations
- Pivots and rotates to accommodate test requirements



Model 130D20

- 1/4" free-field response
- 30 to 122 dB range
- 20 to 15k Hz
- BNC connector



Model 130D21

- 1/4" free-field response
- 30 to 122 dB range
- 20 to 15k Hz
- 10-32 connector

Acoustic Calibrators

- For microphones that meet IEC and ANSI standards
- Lightweight, portable and battery operated
- Available with optional adaptors for a variety of microphone diameters



Model CAL200

- 1/8", 1/4" & 1/2" microphones (with optional adaptors)
- 1k Hz \pm 1% frequency
- 94 dB, 114 dB \pm 0.2 dB output level (re 20 μ Pa)
- Type 1 & Type 2 versions
- 4.18" L \times 2.5" W \times 1.02" D (106.1 \times 63.4 \times 25.9 mm)



Model CAL250

- 1/8", 1/4", 1/2" & 1" microphones (with optional adaptors)
- 251.2 Hz \pm 2.0 Hz frequency
- 114 dB, \pm 0.1 dB output level (re 20 μ Pa)
- Automatic barometric pressure compensation
- 4.9" L \times 1.75" Dia (124 \times 44.5 mm)

Model 079A31

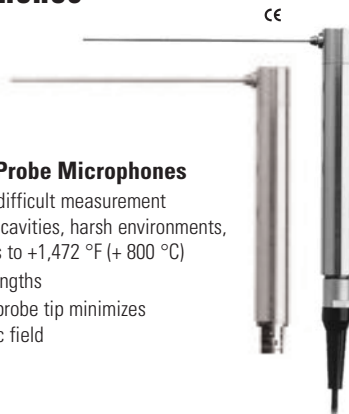
- 8-channel calibration coupler (for use with CAL250)



Specialty Microphones

High Temperature Probe Microphones

- Designed for use in difficult measurement environments, small cavities, harsh environments, or high temperatures to +1,472 °F (+ 800 °C)
- Multiple probe tip lengths
- High acoustic input probe tip minimizes influence on acoustic field



Low-profile Surface Microphone

- For automotive, aeronautical & general acoustic, sound pressure level testing
- 20 to 15k Hz
- 40 to 122 dB range
- Operates from ICP® sensor power



Microphone Accessories



Windscreens



Nose Cones



Adaptors/holders



A-weight Filter

Compatible with ICP™ microphone preamplifiers



Cables



Microphone Stands

High Amplitude Acoustic Pressure Sensors

High sensitivity piezoelectric pressure sensors are well-suited for high-amplitude acoustic measurements in gases and liquids. They are capable of surviving extreme temperatures and fluid environments in which condenser microphones would normally fail. Fluid-borne noise, jet engine noise, air turbulence, and pulsation detection represent just a few measurement capabilities of such piezoelectric pressure sensors.

High Amplitude Acoustic Pressure Sensors



Series 103 ICP® Pressure Sensors

- 181 to 190 dB
- 13k Hz
- -100 to +250 °F (-73 to +121 °C)



Model 106B ICP® Pressure Sensor

- 189 dB
- 60k Hz
- -65 to +250 °F (-54 to +121 °C)



Series 106B51 ICP® Pressure Sensor

- 170 to 185 dB
- 40k Hz
- -65 to +250 °F (-54 to +121 °C)



Series 116B Charge Output Pressure Sensor

- 211 dB
- 60k Hz
- -400 to +750 °F (-240 to +400 °C)